SMRCKA, Karel

"Explosion hydrodynamics" by J. S. Jakovlev [Yakovlev, Yu. S.]. Reviewed by Karel Smrcka. Stroj vyr 12 no.6:462 Je '64.

"Industrial methods of ventilation system assembly" by L.D. Paskov [Pashkov, L.D.]. Reviewed by Karel Smrcka. Stroj vyr 12 no.6:462 Je '64.

[illegible], Karel

Automobil [illegible] a loading device. Inz stavby [illegible] no.6 Suppl Mechanizace no.[illegible] [illegible]).

SMRCKA, Karel

Technical and economic conference of the Montazni zavod Transporta. Stroj vyr 12 no.3:226 '64.

"Mechanization of hot die forging" by N.P. Katkov, V.V. Bassejin, M.P. Katkov, N.A. Krovjancev. Reviewed by Karel Smrcka. Ibid.:233.

"Handbook on cranes." Pt. 3. Reviewed by Karel Smrcka. Ibid.:234.

"Mounting of steam boilers" by [Ing.] H. Forster. Reviewed by Karel Smrcka. Ibid.:235.

1. Secretary of the GOS, Czechoslowak Scientific Technological Society, Section of Assembling.

SMRCKA, Karel

Apparatus for removal of weld reinforcement on pipes. Zvaranie 13 no. 4:119-120 Ap '64.

SMRCKA, Karel

Automatic safety coupling of air distributing piping. Uhli 6 no. 8:283 Ag '64.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001651730009-9"

[illegible]

The [illegible] facilities for [illegible] of bunkers. [illegible] no.1:Suppl.Mechanizacja [illegible]

L 46211-66 EWT(1)/ESS-2

ACC NR: AP6017076 (A) SOURCE CODE: UR/0317/66/000/001/0027/0029

AUTHOR: Smrchka, K. (Engineer; Lieutenant colonel in Czechoslovak army)

ORG: None

TITLE: New training methods

SOURCE: Tekhnika i vooruzheniye, no. 1, 1966, 27-29

TOPIC TAGS: military training, training procedure, ground force training, military tank

ABSTRACT: New methods of training brought into use by the Czechoslovakian Army for training the personnel of armored tank units are discussed. The old method of technical training conducted in tank companies is replaced by training on the battalion level. The tank crews usually are divided into two groups: mechanic-drivers and the crew chief with gunners. The monthly training schedule of a mechanic-driver group provides 3 days in the fall period and 2 days in winter and summer. Other groups have 2 and 1 day per month. Once per month, the entire battalion is assembled for training exercises. The advantages of a battalion-type training (tactical operations, overall control, coordination, efficient use of equipment) are reviewed and the need in providing the groups with training aids and supplies is stressed. An example of a two-day training program for a tank battalion is presented in a table including subjects, questions, places of training, time, number of trainees, equipment and grades of training officers. Orig. art. has: one table.

SUB CODE: 15/ SUBM DATE: None

Card 1/1 blg

L 20240-66 EWT(1)/ETC(f)/EWG(m)/T IJP(c)

ACC NR: AP6010315 SOURCE CODE: CZ/0037/65/000/006/0466/0475

36

AUTHOR: Bednar, Jan; Smrcka, Ludvik; Misek, Karel

B

ORG: Institute of Solid State Physics, CSAV, Prague (Ustav fyziky pevnych latek CSAV); [Smrcka] Faculty of Technical and Nuclear Physics, CVUT, Prague (Fakulta technicke a jaderne fysiky CVUT)

TITLE: Exact measurement of changes in the density of solids 21

SOURCE: Ceskoslovensky casopis pro fysiku, no. 6, 1965, 466-475

TOPIC TAGS: specific density, metal physical property, hydrostatics

ABSTRACT: The article describes a method of determining small changes in the density of metallic samples by differential hydrostatic weighing. High sensitivity was achieved by placing the comparison and investigated samples in the same bath; the influence of variation of the equilibrium position of the balance was suppressed by interchanging the samples. The method permits the determination of the relative change in density of a sample 1 cu cm in volume with an accuracy of up to $\pm 2 \times 10^{-6}$. Improved sensitivity can be achieved by using larger samples. Orig. art. has: 2 figures and 6 formulas. [JPRS]

SUB CODE: 20, 11 / SUBM DATE: 17Aug64 / ORIG REF: 001 / OTH REF: 007

Card 1/1 LJC

2

L 21331-66 T/EWP(t) IJP(c) JD/JG

ACC NR: AP5015929 SOURCE CODE: CZ/0055/65/015/006/0418/0424

AUTHOR: Smrcka, L.; Misek, K.; Bednar, J.

ORG: [Smrcka] Faculty of Technical and Nuclear Physics, formerly of Czech Technical University, presently of the Institute of Solid State Physics, Prague; [Misek; Bednar] Institute of Solid State Physics, Czechoslovak Academy of Sciences, Prague

TITLE: The density of quenched gold (Short report read at the conference on Point defects in quenched metals, ANL, June 1964)

SOURCE: Chekhoslovatskiy fizicheskiy zhurnal, v. 15, no. 6, 1965, 418-424

TOPIC TAGS: gold, platinum, silver, copper, aluminum, specific density, metal oxidation, annealing, quenching, differential method

ABSTRACT: A precision hydrostatic differential method for measuring small density differences of solid bodies was used for the determination of the activation energy of vacancy formation and migration in quenched gold. The authors believe that precise density measurement can be used to study the imperfection in metals. The desirable higher sensitivity can be achieved with larger specimens. The method is laborious and time consuming. Special precautions had to be taken even with gold and platinum which have a stable surface. In other metals (J. Bernar; L. Smrcka; K. Misek; Cs. cas. fys. A 15, 1965), such as copper, silver, or aluminum, it is difficult ot prevent the oxidation of the surface and the dissolution of oxygen and of other elements in the specimen during annealing and quenching. According to Jeannotte

Card 1/2

L 21331-66

ACC NR: AP5015929

and Machlin (Phil. Mag. 8, 1835, 1963), it is probable that the annealing of vacancies in gold is influenced by the presence of minor traces of oxygen. It seems that in order to get significant results, it will be necessary to avoid gas contamination in applying any method. Density measurement do not give the same precision in determining relative changes of vacancy concentration as conventional methods (for example, electrical resistance measurements). The author L. Smrcka thanks the Institute of Solid Physics for the facilities put at his disposal during the work on his diploma thesis in the academic year 1962/63 (this paper being a part of it). Orig. art. has: 3 figures, 4 formulas, and 1 table. [NT]

SUB CODE: 11, 20/ SUBM DATE: 07Dec64/ OTH REF: 010/

Card 2/2

Distr: 4E2c(m)

The (γ,p) reaction on cadmium and tin. M. Rozkoš, M. Smrčka, and O. Jakubček (Karlova Univ., Prague). Czechoslov. J. Phys. 10, No. 2, 125-35 (1960) (in Russian).—The nuclear photoeffect is studied on Sn and Cd; in contrast to most of the expts. with this effect up to now, discrete γ-rays were used. The exptl. arrangement of a previous paper (*CA* 53, 18670e) was used. Results of interest include the discreteness of the energy spectrum and the unconventional form of the angular distribution. With Sn, the top proton shell of which is completely occupied, the shape of the energy spectrum corresponds to the Wilkinson theory (*CA* 52, 9804i) of giant resonance; with Cd, the energy spectrum is similar to the evapn. spectrum. The angular distributions of the photoprotons of both elements do not satisfy the commonly used relations corresponding to existing theories of the nuclear photoeffect. They can, however, be described quite well by empirical equations which contain assocd. Legendre polynomials; the results have features of both a direct and a collective process. A satisfactory explanation of the results would require a new theory including both types of processes. A. Kremheller

8

MJC(JO)

1

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1.1800

Z/032/61/011/008/007/009
E073/E535

AUTHORS: Smrčková, J. and Němec, M.

TITLE: Combination of varnish coatings with a (sprayed-on) chemically reduced silver layer

PERIODICAL: Strojírenství, 1961, Vol.11, No.8, p.635

TEXT: The classical method of reduction of silver coatings from silver nitrate by means of formaldehyde can also be effected by spraying by means of a two-nozzle spray-gun. Reduction of the silver takes place on the activated surface of the body immediately after impingement of the finely atomized solutions. The formed coating is about 3 μ thick, non-porous and adheres strongly to metal, glass and organic materials. To prevent pumping, a transparent varnish is provided on top of the silver coating. This method is particularly favourable in the timber industry (as a substitute for imported metal foils) and for treatment of small size consumer goods.

1959, Prague: SVÚOM 14/59.

[Abstractor's Note: Virtually complete translation.]

Card 1/1

SMRKOVA, L.

New Czechoslovak engraved glassware. L. SMRKOVA. *Czechoslovak Glass Rev.*, 20 [6] 11-14 (1955) (in English); abstracted in *Ind. Diamond Rev.*, 15 [180] B297 (1955).—Techniques incorporating diamond linear and pinpoint engraving on vases, etc., are used. 4 figures. V.R.E.

SMECKOVA, L.

"Our table glassware at the Triennale, 1957 and at the Brussels Fair, 1958."
P. 119.

SKLAR A KERAMIK. (Ministerstvo lehkeho prumyslu). Praha, Czechoslovakia,
Vol. 9, No. 4, Apr. 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 8,
August 1959.
Uncla.

SMRCKOVA, Ludvika, prof., zaslouzila umelkyne

Museum of Glass in Corning, U.S.A. Sklar a keramik 15 no.2:56
F '65

Two hundred years of the Baccarat Glassworks. Ibid.:64

SIMKOVIC, I.; BOLF, J.; SISKA, K.; GUPKA, M.; SMRECANSKY, V.; SCHNORHER, M.; ZIMA, P.

Apparatus for artificial blood circulation designed in Czechoslovakia. Eksper. khir. 5 no.6:16-22 N-D '60. (MIRA 14:2)
(PERFUSION PUMP (HEART))

SIMKOVIC, I.; SMRECANSKY, V.; TRANCIK, J.

Contribution to the function of disc oxygenators. Bratisl. lek. listy 41 no.10:577-585 '61.

1. Z II chirurgickej kliniky Lek. fak. Univ. Komenskeho v Bratislave, prednosta akademik SAV K. Siska, nositel Radu prace.

(HEART MECHANICAL)

SHISHKA, K.[Siska, K.]; SHIMKOVITS, I.[Simkovic, I.]; GUBKA, M.[Hubka, M.]; SMRECHANSKIY, V.[Smrecansky, V.]; SHNORER, M.[Snorer, M.]

Surgery for mitral stenosis using artificial circulation. Khirurgiia no.4:3-6 '62. (MIRA 15:6)

1. Iz 2-y khirurgicheskoy kliniki meditsinskogo fakul'teta Universiteta imeni Komenskogo i otdeleniya eksperimental'noy khirurgii Instituta eksperimental'noy meditsiny Slovatskoy akademii nauk (zav. - akad. K. Shishka), Bratislava.

(MITRAL VALVE—SURGERY)
(BLOOD—CIRCULATION, ARTIFICIAL)

SMRECHANSKIY, V.[Smrecansky, V.]; SHISHKA, K.[Siska, K.]; SHIMKOVITS, I. [Simkovic, I.]; SHNORER, M.[Snorer, M.]; GUBKA, M.[Hubka, M.]

Some problems of perfusion in artificial circulation. Khirurgiia no.4:85-92 '62. (MIRA 15:6)

1. Iz 2-y khirurgicheskoy kliniki meditsinskogo fakul'teta universiteta imeni Komenskogo i otdeleniya eksperimental'noy khirurgii Instituta eksperimental'noy meditsiny Slovatskoy akademii nauk (zav. - akad. K. Shishka), Bratislava.

(BLOOD--CIRCULATION. ARTIFICIAL)

SHISHKA, K. [Siska, K.]; SHIMKOVITS, I. [Simkovic, I.]; GUBKA, M. [Hubka,M]; SMRECHANSKIY, V. [Smrecansky, V.]; SHNORER, M. [Snorer, K.]

Surgery using an apparatus for extracorporeal circulation. Khirurgiia no.9:18-22 '62. (MIRA 15:10)

1. Iz 2-y khirurgicheskoy kliniki meditsinskogo fakul'teta Universiteta imeni Komenskogo v Bratislave i otdeleniya eksperimental'noy khirurgii (zav. - akad. K.Shishka) Instituta eksperimental'noy meditsiny Slovatskoy akademii nauk.
(PERFUSION PUMP (HEART))

SHISHKA, K.; SHIMKOVITS, I.; GUBKA, M.; SMRECHANSKIY, V.; SHNORRER, M.

Experience acquired in surgery by the use of an artificial heart and lungs. Trudy Inst.eksp.i klin.khir.i gemat. AN Gruz. SSSR 10:13-23 '62. (MIRA 16:2)

(PERFUSION PUMP (HEART))
(CARDIOVASCULAR SYSTEM--SURGERY)

SHIMKOVITS, I.; BOL'F, Yu.; SHISHKA, K.; GUBKA, M.; SMRECHANSKIY, V.; SHNORRER, M.; ZIMA, P.

Apparatus fo Czech design for artificial blood circulation. Trudy Inst.eksp.i klin.khir.i gemat. AN Gruz.SSR 10:25-34 '62. (MIRA 16:2)

(CZECHOSLOVAKIA—PERFUSION PUMP (HEART))

SMRECHANSKIY, V.; SHISHKA, K.; SHIMKOVITS, I.; SHNORRER, M.; GUBKA, M.

Some perfusion problems in artificial blood circulation. Trudy Inst. eksp. i klin. khir. i gemat. AN Gruz. SSR 10:35-42 '62. (MIRA 16:2)

(PERFUSION PUMP (HEART))

GUBKA, M.; SHISHKA, K.; SHIMKOVITS, I.; SMRECHANSKY, V.; SHNORRER, M.

Protection of the myocardium during the prevalence of asystole in an intracardiac operation by the use of the appaprtus for artificial blood circulation. Trudy Inst.eksp.i klin.khir. i gemat. AN Gruz.SSSR 10:57-65 '62. (MIRA 16:2)
(HEART—SURGERY) (BLOOD —CIRCULATION, ARTIFICIAL)

GUBKA, M.; SHISHKA, K.; SHIMKOVITS, I.; SMRECHANSKIY, V.; SHNORRER, M.

Care of the patient following a heart operation with the use of artificial blood circulation. Trudy Inst.eksp.i klin.khir. i gemat. AN Gruz.SSR 10:67-72 '62. (MIRA 16:2)
(HEART--SURGERY) (BLOOD--CIRCULATION, ARTIFICIAL)
(POSTOPERATIVE CARE)

SHNORRER, M.; SHISHKA, K.; SHIMKOVITS, I.; GUBKA, M.; SMRECHANSKIY, V.

Changes in coagulation and anticoagulation factors of the blood in artificial blood circulation. Trudy Inst.eksp.i klin.khir. i gemat. AN Gruz.SSR 10:73-76 '62. (MIRA 16:2)
(BLOOD—COAGULATION) (BLOOD—CIRCULATION, ARTIFICIAL)

GUBKA, M.; SHISHKA, K.; SHIMKOVITS, I.; SMRECHANSKIY, V.; SHNORER, M.

Protection of the myocardium in cardiac arrest during intracardiac interventions with artificial circulation. Khirurgiia 38 no.5: 17-25 My '62. (MIRA 15:6)

1. Iz otdeleniya eksperimental'noy khirurgii (zav. - akad. K. Shishka) Instituta eksperimental'noy meditsiny Slovatskoy akademii nauk.

(HEART, FAILURE) (HEART—MUSCLE)
(BLOOD—CIRCULATION, ARTIFICIAL)

SHNORER, M.; SHISHKA, K.; SHIMKOVITS, I.; GUBKA, M.; SMRECHANSKIY, V.

Changes in the coagulation and anticoagulation blood factors during artificial circulation. Khirurgiia 38 no.5:25-27 My '62. (MIRA 15:6)

1. Iz 2-y khirurgicheskoy kliniki meditsinskogo fakul'teta Universiteta imeni Komenskogo v Bratislave i otdeleniya eksperimental'noy khirurgii (zav. - akad. K. Shishka) Instituta eksperimental'noy meditsiny Slovatskoy akademii nauk.

(BLOOD--COAGULATION) (BLOOD--CIRCULATION, ARTIFICIAL)

SISKA, K.; SIMKOVIC, I.; VANZUROVA, E.; SCHNORRER, M.; SMRECANSKY, V.; HUBKA, M.; ONDROUCHOVA, D.

Postoperative complications and postoperative care of patients operated on with the use of extracorporeal circulation. Bratisl. lek. listy 42 no.9:523-535 '62.

1. Z II chir. kliniky Lek. fak. Univ. Komenskeho v Bratislave, prednosta clen koresp. CSAV K. Siska.

(HEART MECHANICAL) (HEART SURGERY compl)
(POSTOPERATIVE CARE)

SIMKOVIC,I.; SMRECANSKY,V.; KRATOCHVIL,M.; CERNY,J.

Functional evaluation of membrane pumps. Bratisl. lek. listy 44 no.4:193-198 '64.

Hemodynamic laws in the arterial sector of the extracorporeal circulation. Ibid:199-202

1. II. chirurgicka klinika Lek.fak.Univ.Komenskeho v Bratislave (veduci: akademik K.Siska) a Laboratorium pre vyzkum chirurgickej patofyziologie Lek.fak.Univ.Komenskeho v Bratislave (veduci: prof.M.Kratochvil).

SMREKNIK, I.

Professor Oton Bajc - 60th anniversary. Zdrav. vestn. 33 no.1: 1-2 '64

SMRECZYNSKA, A.

Piatkowska, K.; Smreczynska, A.

"Determining the content of citric acid in raw blackberry juice and in wine obtained from it by the process of fermentation." p. 493 (Roczniki, No. 4, 1953, Warsaw)

SO: Monthly List of East European Accessions, Library of Congress, Vol. 3, No. 6, June. 1954, Uncl.

SMRECZYNSKA, A

Fiatkowska, K.; Smreczynska, A.

"Determining the amount of manganese in raw raspberry juice in various regions of the country." p. 497 (Roczniki, No. 4, 1953, Warsaw)

SO: Monthly List of East European Accessions, Library of Congress, Vol. 3, No. 6, June 1954, Uncl.

[illegible] Yu.S[illegible], [illegible]

[illegible], J. Supplement to the [illegible] of the [illegible] of the Eighteenth [illegible] Poland. [illegible] 1959.

Vol. 7, no. [illegible], [illegible]
Poland
SCIENCE

So: East European Accessions, Vol. 5, [illegible] 1956

SMRHA, L.

2

Metal

Carburizing of liquid steel with coke in the ladle. L. Smrha and M. Böhm (*Hutn. List.*, 1956, **11**, 143—148).—Statistical analysis indicated that the process has only a small effect on melt yields. The gas content in the steel is, however, increased. (English summary.) L. S. C.

Smrha, L.

Zone Liquation and Mechanical Properties as Observed in a Section through a Forging Blank taken from a 110 Ton Ingot. L. Smrha. (*Hutnické Listy*, 1956, 11, (6), 363–370). [In Czech]. It is shown on the basis of analysis of samples taken from a basic O.H. 1·4% Cr, 0·15% Mo, 0·2% V steel that the liquation of phosphorus was greater than the segregation of sulphur. The order of liquation being: carbon, phosphorus, sulphur. The effect of sulphides, and the relation between liquation, and contraction and ductility are discussed.—P. F.

SMRHA L.

HUTNICKE LISTY
Nr 8, Vol 12, 1957

L. Smrha • R. Hlucin: Control and Recording of Temperatures during Pouring and Solidification of Steel ....

Control and Recording of Temperatures during Pouring and Solidification of Steel

In measuring liquid steel temperatures and the determination of the solidification course of steel castings, good results were obtained with the use of thermocouples Pt/PtRh 10 % in a protective quartz capillary tube. The recording of measured values was carried out by means of a mechanical high-speed recorder developed for this purpose. This apparatus is more advantageous for use with Pt/PtRh thermocouples than the loop-oscillograph, unless, of course, very rapid temperature changes have to be followed. The high-speed recorder is arranged to be used for the differential thermal analysis and its possibilities of application are still greater.

KRIHA, L.; KLUSKA, K.

Control and recording of temperatures during the pouring and solidification of steel.

p. 711 (Hutnicke Listy) Vol. 12, no. 8, Aug. 1957, Praha, Czechoslovakia

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC, VOL. 7, NO. 1, JAN. 1958

CZECH/34-59-4-18/18

AUTHORS: Šmrha, L., Ing. and Kuběna, S., Ing.

TITLE: Investigations on Mould Coatings (Výzkum kokilových nátěrů)

PERIODICAL: Hutnické Listy, 1959, Nr 4, pp 361 - 368 (Czechoslovakia)

ABSTRACT: In the here described investigations on coatings for steel-ingot moulds, the causes were detected of the unsatisfactory properties of mould coatings based on coaltar pitch. It was found that the content of volatile substances of coaltar pitch is too low to prevent adhesion of the ingot skin to the mould. The authors have examined a large number of various products derived from natural oil and coaltar and also substances based on bakelite resins. The authors have developed inorganic mould coatings which have been throughly tested both by physical and chemical methods in special rigs in which the conditions occurring during casting were simulated and also in normal steelwork operation. The experiments confirmed that it is advantageous to use mould varnishes based on petroleum (propane asphalt), benzol resins or phenol-resol resins. Benzol resins

Card1/2

[illegible]

"[illegible] made in heating of [illegible] heads."

[illegible], [illegible], [illegible]. Vol. [illegible], No. [illegible], [illegible] [illegible].

[illegible] East European Accessions [illegible], IE, Vol. [illegible], No. [illegible], [illegible], Unclas

SMRHA, L.

Effect of casting technology of the ingot mold coatings on the quality of ingots. p.190.

HUTNIK, (Ministerstvo hutniho prumyslu a rudnych dolu) Praha, Czechoslovakia. Vol. 9, no. 6, June 1959.

Monthly List of East European Accessions (EEAI) LC Vol. 8, no. 11, Nov. 1959
Uncl.

SMRHA, Lubomir; BRODSKY, Ivo

Effect of various activators on the reactivity of exothermic mixtures of non-thermite type. Hut listy 17 no.2:111-114 F '62.

1. Vyzkumny ustav, Vitkovicke zelezarny Klementa Gottwalda.

SMRHA, Lubomir, inz., C.Sc.; CHVOJKA, Jan, inz.

The problems in using exothermic mixtures. Hut listy 17 no.7:472-479 Jl '62.

1. Vitkovicke zelezarny Klementa Gottwalda, Ostrava.

SAIP, JIRI; SMRHA, Lubomir; KOSNOVSKY, Zdenek

Exothermic risers of steel castings. Slevarenstvi 11 no.7: 266-272 Jl '63.

1. Vitkovicke zelezarny Klementa Gottwalda, Ostrava - Vitkovice.

HERIAN, E.; PUNCOCHAR, Z., inz.; CHVOJKA, Jan, inz.; KECLIK, V., inz.; SMRHA, L., inz.; ZIDEK, M., inz.; HORAK, J., dr. inz.; TEINDL, J.; SEDLACEK, V.

Information on metallurgy. Hut listy 18 no.6:436-450 Je '63.

SMRHA, Inbomir, inz., CSc; CHVOJKA, [illegible]; KANOK, [illegible], inz.

Modeling and analysis of pipes in tube mill ingots. Hut listy 18 no.9:622-635 S'63.

1. Vitkovicke zelezarny Klementa Gottwalda (for Smrha and Chvojka). 2. Vyzkumny ustav hutnictvi zeleza, Praha (for Kanok).

CHVOJKA, Jan, inz.; SMRHA, Lubomir, inz., CSc.

Pipes in circular section ingots teemed without feeder heads.
Hut listy 18 no.10:700-707 O '63.

1. Vitkovicke zelezarny Klementa Gottwalda, Ostrava.

L 38759-66 EWP(k)/EWP(e)/EWP(t)/ETI WH/WW/JD

ACC NR: AP6029566 SOURCE CODE: CZ/0057/65/000/009/0373/0377

AUTHOR: Smrha, Lubomir (Engineer; Candidate of sciences); Lhotsky, Milan (Engineer)

ORG: VZKG, Ostrava

TITLE: Investigation of the efficiency of loose powdered insulation of ingot heads during production operations

SOURCE: Hutnik, no. 9, 1965, 373-377

TOPIC TAGS: heat transfer coefficient, metal casting, heat insulation, industrial production

ABSTRACT: The experiments were conducted at the Steel Works of the Klement Gottwald plant. A theoretical evaluation of the problem indicates that even a drastic reduction of the heat transfer coefficient at the ingot head does not achieve a considerable steel saving in normal commercial casting operations. Perlite, fly ash, a 50:50 mixture of scale and ferrosilicone, vermiculite, and graphite were used for insulation. No differences due to the insulation type were observed either in the yield or quality of the product. Orig. art. has: 10 figures and 3 tables. [JPRS]

SUB CODE: 13, 20, 05 / SUBM DATE: none / ORIG REF: 004 / SOV REF: 001
OTH REF: 001

Card 1/1

0917 2660

ACC NR: AM6027634 SOURCE CODE: CZ/0034/66/000/004/0294/0294

INVENTOR: Chvorinov, N. (Engineer); Smrha, L. (Engineer); Brodsky, I. (Engineer)

ORG: none

TITLE: Shapes for steel or alloy steel casting through the bottom. Class 31c, No PV 4567-65

SOURCE: Hutnicke listy, no. 4, 1966, 294

TOPIC TAGS: metal casting, metal surface, steel

ABSTRACT: The article is a summary of Czechoslovak Patent Application Class 31c, 14, PV 4567-65, dated 17 July 65. The basis of the invention is the fact that the part of the form which contacts the molten metal is hollow. Slag forming powder is added directly in the casting shapes; the process provides ingots with improved surfaces. Orig. art. has: 1 figure. [JPRS: 36,646]

SUB CODE: 13 / SUBM DATE: none

Card 1/1 ULR

0916 2317

SMRHA, Lubomir, inz., C.Sc. (Ostrava)

Theoretical determination of the size of ingot feeder head on the basis of its thermal balance. Hut listy 17 no.9:626-629 S '62.

SMRHA, O.

Effect of food consumption on trends in the food industry. p.232.
(Prumysl Potravin, Vol. 8, No. 5, 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 9, Sept. 1957. Uncl.

SMRHA, Oldrich; HRUBA, Marie, dr.

Consumption plan and its importance for the development of food production. Prum potravin 14 no.3:132-135 Mr '63.

1. Vyzkumny ustav ekonomiky potravinarskeho prumyslu, Praha.

SMEHA, V., inz.

Tolerances of dimensions determining the position of bolt hole axes. Strojirenstvi 14 no.1:51-57 Ja'64.

1. Zavody V.I. Lenina, Plzen.

A Study of Electrolytically Isolated Carbides from Low-Alloy Boiler Plate. M. Sicha, A. Smrková, and F. Ermis. (*Hutnické Listy*, 1955, 10, (3), 140-152. [In Czech]. The separation and micro-analysis of the carbides are described. Chemical and electron-diffraction methods were used for the identification. Carbides in vanadium steels were found to stabilize sooner than in molybdenum steels of similar compositions. The mode of carbide stabilization is described on the basis of data obtained in experiments carried out in the range 500–550° C. over periods of 8000–125,000 hr.—P. V.

SMRHOVA, ANNA

27

6

Chemical determination of oxide admixtures from carbon steels. Anna Šmrhová, Lubomír Brháček, and Jiří Janáček (Výzkum VŽKG, Ostrava, Czech.). *Hutnické listy* 3, 263-7(1958).—The prepn. of the sample for analysis and the detn. of Si, Fe, Al, and Ca were discussed. The chief advantages of this method are simple processing, double control of the amt. of CaO, and a simple detn. of Al. 16 references. Petr Schneider

1/1

CZECH/34-59-1-10/28

AUTHORS: Brháček, Lubomír, RNDr., Janáček, Jiří and Šmrhová, Anna, Ing.

TITLE: Electrolytic Isolation of Non-metallic Inclusions in Steel by means of the Modified Klinger-Koch Apparatus (Elektrolytická isolace nekovových vměstků v oceli modifikovanou apparaturou Klinger-Koch)

PERIODICAL: Hutnické Listy, 1959, Nr 1, pp 54-55 (Czechoslovakia)

ABSTRACT: The Klinger-Koch method is used most extensively for isolating non-metallic inclusions in steel and a variant of it is being used in various Czech laboratories. This method does not always yield satisfactory results, mainly due to the high resistance of the electrolyte and the resulting high potential of the anode. On the basis of published information on Swedish and German experience (Refs 3 and 4), the authors have built an electrolyser with a vertical diaphragm, a sketch of which is shown in Fig 1, p 54. The electrical circuit diagram is shown in Fig 2. Fig 3 shows the potential-current density (polarization) curves obtained with the hitherto used electrolyser as well as with the new electrolyser.

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CZECH/34-59-1-10/28

Electrolytic Isolation of Non-metallic Inclusions in Steel by means of the Modified Klinger-Koch Apparatus

Table 1 gives a comparison of a few parameters of the new electrolyser with the hitherto used one. Table 2 contains results of the analysis of isolates of oxide inclusions in five low carbon steel specimens; one of the specimens, B1, was isolated with the previously used instrument and the time required for doing so was twice as long. The instrument is being used mainly for isolation of carbides and sulphides.
There are 6 figures, 2 tables and 5 references, 1 of which is Czech, 3 German and 1 English.

ASSOCIATION: Výzkum a vývoj VŽKG, Ostrava (Research and Development VŽKG, Ostrava)

Card 2/2

CZECH/34-59-6-23/23

AUTHORS: Šmrhová, Anna, Ing. and Janáček, Jiří

TITLE: Contribution to the Problems Relating to the Determination of Oxygen on the Basis of the Content of Non-metallic Inclusions in Rimming Steel (Příspěvek k problematice stanovení kyslíku podle obsahu nekovových vměstků v neuklidněných ocelích)

PERIODICAL: Hutnické Listy, 1959, Nr 6, pp 559-564 (Czechoslovakia)

ABSTRACT: Czechoslovak Metallurgical Research Report, Nr 6, 1959. In this brief report the results are described of determining oxide inclusions in rimming steel, according to a method proposed by I. I. Ansheles, which consists of electrolytic isolation and selective extraction by means of chemical reagents. The method of electrolytic isolation was modified by the authors of this paper to ensure the minimum disruption of less stable components of the inclusions and slight modifications were also made in the method of extraction. Comparative tests made on specimens from a 3.7 ton billet of soft rimming steel (0.07% C, 0.30% Mn, 0.00% Si, 0.030% P, 0.032% S, 0.006% Al, 0.05% Cr) showed that the total content of

Card 1/2

SMRHOVA, Anna, inz.; JANACEK, Jiri

Determination of the aluminum nitride in steel. Hut listy 16 no.6:430-435 Je '61.

1. Vyzkumny ustav, Vitkovicke zelezarny Klementa Gottwalda, Ostrava.

MYSLIVEC, T.; SMRHOVA, A.

Effect of deoxidation with silicon-zirconium on the amount of non-metallic inclusions and on the property of steel. Hut listy 17 no.4:249-256 Ap '62.

1. Vitkovicke zelezarny Klementa Gottwalda, Ostrava.

EXCERPTA MEDICA Sec.6 Vol.11/3 Internal Med. Mar 57

1926. ŠMRHOVÁ I. Z Vnitřního Odd. Nem. OÚNZ a Okresní Transf. Stanice, Hranicích. *Prudké hemolytické anemie po carbaphenu. Violent haemolytic anaemia after carbaphen ČAS.LÉK.ČES. 1956, 95/28-29 (768-773) Graphs 3 Tables 1 Illus. 2

Fifteen cases of acute haemolytic anaemia in adults are described, produced by the prolonged administration of the SPOFA preparation, carbaphen (phenylsemicarbaside). Anaemia occurred after the drug had been given for 7-14 days. It was of varying intensity but in most cases severe. Its haemolytic character was evident from the morphology of the erythrocytes, reticulocytosis, the finding of increased erythropoiesis in the bone marrow and urobilinogen in the urine. The condition showed itself clinically by a striking deterioration in the general condition and signs of rapidly developing anaemia. Mild icterus appeared in some patients. Neither pyrexia nor splenomegaly was observed. Coombs test was always negative. In most cases the anaemia disappeared rapidly after the drug had been stopped. Severe cases were given transfusions. Attention is drawn to the danger of carbaphen when given over a long period.

SMRHOVA, IRMA

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Prague, [illegible], Vol VIII, No 2, February 1961 (continued)

[illegible] (Universita Komenského Comenius University), Bratislava, Prof [illegible], director (presented); pp [illegible] (English summary).

9. "Unusual Course of Dissecting Aneurysm of the Aorta," [illegible] Second Clinic of Internal Medicine [illegible] Clinic), Prof [illegible], director (presented), and [illegible], Institute of Pathological Anatomy [illegible], Prof [illegible], director (presented); pp [illegible] (English summary).

10. "An Uncommon Type of Sore Throat Epidemic," [illegible], Department of [illegible] Medicine (Ministry of Health [illegible]), [illegible], director (presented), and [illegible] Transfusion Station (Okresní [illegible] transfusní stanice), [illegible], director (presented), Hospital in [illegible]; pp 170-173 (English summary).

11. "A Case of Delayed Recognition of Suspected Poliomyelitis Septicemia," [illegible], Second Clinic of Internal Medicine, Faculty of Medicine [illegible], Prof, director (presented); pp 175-[illegible] (English summary).

12. "Generalized Hypertonia with [illegible]," [illegible], Department of [illegible] (Neurologická klinika), [illegible], director, [illegible] Institute, [illegible], director (presented); pp [illegible] (English summary).

13. "Preliminary Report on the Use of [illegible] the Puncture of [illegible] for Temporary Organs," [illegible], Clinic [illegible], Faculty [illegible] of Medicine (Lékařská fakulta), [illegible], Prof [illegible], director (presented), [illegible] and Modern [illegible], Institute for [illegible] Work and Occupational Diseases [illegible], director (presented); pp [illegible] (English summary).

14. "Comparative Study of Causes of Failure and Mistakes in Laboratory Investigations," [illegible] Department [illegible] (Ústav [illegible]), [illegible], director (presented), [illegible] of [illegible] and [illegible] Institute (Ústav [illegible] Nuclear Medicine), Docent, [illegible], head (presented); pp [illegible] (English summary).

#245

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SMRKINIC,B.,dr.; AKERMAN,R.,dr.; PEROVIC,S.,dr.

Our experiences with ophthalmological examination of newborn infants. Med. glasn. 13 no.7:379-381 Jl '59.

1. Ocni, Ginekolosko-porodajni i Djecji odjel Opce bolnice u Zadru.
(EYE DISEASES in inf. & child)
(INFANT NEWBORN dis.)

SMRKOVAKA, Vera; MULLER, Karel, doc., inz.

Contribution to the quantitative interpretation of magnetic anomalies in sedimentary basins. Sbor VSB Ostrava 8 no.4:463-470 '62.

YEROFEYEV, N.I., kand.tekhn.nauk; MILYUKOV, P.M., tekhnik; OBREZANOV, P.I., inzh.; SMRKOVSKIY, E.V.

Program control of a hoisting machine. Mekh. i avtom. proizv. 15 no.7:33-37 Jl '61. (MIRA 14:7)
(Hoisting machinery) (Automatic control)

ACCESSION NR: AP4044122 S/0118/64/000/008/0021/0025

AUTHOR: Yerofeyev, N. I. (Candidate of technical sciences); Obrezanov, P. I. (Engineer); Smrkovskiy, E. V. (Engineer); Milyukov, P. M. (Technician)

TITLE: Program control of a gantry crane

SOURCE: Mekhanizatsiya i avtomatizatsiya proizvodstva, no. 8, 1964, 21-25

TOPIC TAGS: program control, automatic control, crane, automatic control system

ABSTRACT: The automation of a grab-bucket gantry crane used for loading-unloading a ship (or a rr car) is described. Prior to automation, the crane operating cycle used to be 60—90 sec, and the crane operator used to perform up to 20,000 switching operations per 8-hr shift. As a result, the crane productivity used to be 15—20% lower than that technically feasible. A magnetic-tape-recorded program control based on a frequency-code system was introduced. A

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ACCESSION NR: AP4044122

simplified connection diagram is presented, and the principal functions of the automatic control (winch and bucket operation, preliminary commands, boom movement, slewing) are briefly explained. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: Odesskiy institut inzhenerov morskogo flota (Odessa Institute of Marine Engineers)

SUBMITTED: 00 ENCL: 00

SUB CODE: IE NO REF SOV: 000 OTHER: 000

Card 2/2

SMROCKOVA, Ludmila, prof.

Exhibition of glass from the collections of Museum of Industrial Art in Budapest. Sklar a keramik 12 no.1:9 Ja '62.

CA

Proteins and amino acids. VI. A synthesis of proline and hygric acid. F. Šorm and J. Smrt (Central Chem. Research Inst., Prague). *Collection Czech. Chem. Commun.* 16, 42-6(1951); cf. *C.A.* 45, 9082*c*.—Tetrahydrofuran was converted into 4-acetoxy-1-bromobutane with AcBr thence to 1-bromo-4-chlorovaleric acid (I) through 4-acetoxyvaleronitrile and 4-chlorovaleric acid. I was cyclized with 40% aq. NH_3 at 90° to DL-proline in a 30% yield and isolated through the Cu salt, m. 195-8°, DL-proline thiodanilate, m. 133.1° decompn. DL-Hygric acid was obtained from I with 40% $MeNH_2$, purified by sublimation at 140° at 1 mm. and recrystn. from $CHCl_3$ m. 169-70°. Et DL-hygrate b_{17} 83.4° was not resolved with *d*-bromocamphorsulfonic acid.

W. M. Potts

SMRT, J.

Behind the window of laboratory

/Beránek, J., Smrt, J., and Streibl, M.: Za okny laboratore. Prague: Mladá Fronta. 1953. 212 pp. 17.50. Kčs. Reviewed in *Chem. Listy* 48, 791(1954).

SMRT, JIRI

Proteins and aminoacids. XII. Synthesis of C-methylglutamic acids. Jiří Smrt and Jaroslav Sorm (Central Chem. Inst., Prague, Czech.). *Collections Czechoslov. Chem. Communs.* 18, 131-9(1953)(English summary); cf. C.A. 47 1215*a*.—After the failure of the Curtius degradation of ester azide of (cyanoethyl)malonic acid, the Schmidt reaction was used for prep. all three C-methylglutamic acids. $AcCHMeCO_2Et$ I with $CH_2:CHCN$ (II) gave $EtO_2CCMeAcCH_2CH_2CN$ (III) which was transformed directly to α-methylglutamic a. I (IV). IV was also obtained by hydrolysis of $O_2CCMeAcCH_2CH_2CO_2Et$ (V) resulting from the action of NaH on $EtO_2CAcMeCCH_2CH_2CO_2Et$. $AcCH_2CO_2Et$ (VI) and $MeCH:CHCO_2Et$ gave $EtO_2CCHAcCHMeCH_2CO_2Et$ (VII). VI and $CH_2:CMeCO_2Me$ gave $EtO_2CCHAcCH_2CHMeCO_2Me$ (VIII). VII and VIII were transformed to β-(IX) and γ-methylglutamic (X) acids resp., by the Schmidt reaction. $MeCHCO_2Et$ (17.4 g.), 15 ml. dioxane and 2 ml. Raney's catalyst treated with 10.6 g. H at 30-40° with cooling, the mixt. acidified with HCl (1:3) after 3 hrs., treated with 25 ml. $CHCl_3$ and 25 ml. H_2O, and the org. layer evapd. *in vacuo* to yield 95% $(NCCH_2CH_2CMe(CO_2Et)_2$, $b_{0.4}$ 110°, d_4^{20} 1.0902, n_D^{20} 1.4409. I (25.8 g.), 10 ml. dioxane, 0.5 g. Na, and 20 ml. EtOH was added, in the course of 1 hr., 21.2 g. H at 35° and the product isolated as above yielding 24 g. (91%) of III, $b_{0.4}$ 116°, d_4^{20} 1.0608, n_D^{20} 1.4408. III (19.7 g.) in 120 ml. of 4.7% NaH soln. was added to a stirred mixt. of 30 ml. concd. H_2SO_4 in 250 ml. $CHCl_3$ at 20-30°, the cooled reaction mixt. dild. with 120 ml. H_2O, the aq. layer extd. with 25 ml. $CHCl_3$, refluxed 10 min., dild. with distd. H_2O to 500 ml., mixed with 215 g. $Ba(OH)_2$ in 500 ml. hot H_2O, boiled 30 min., the $BaSO_4$ was filtered off, washed with 800 ml. hot H_2O contg. 5 ml. H_2SO_4, the Ba and SO_4 ions removed, and the filtrate evapd. *in vacuo* to 100 ml., treated with 100 ml. EtOH and allowed to cryst. in an ice box to yield 8.8 g. (55%) of IV, m. 169° (from H_2O). To 17 g. of $EtO_2CCAcMeCH_2CH_2CO_2Et$ in 100 ml. $CHCl_3$ and 34 ml. concd. H_2SO_4 was added 7 g. HN_3 portion-wise with cooling at 30-35°, the mixt. poured onto 200 g. ice, and the $CHCl_3$ layer extd. with 100 ml. H_2O, dried, and evapd., leaving 14.2 g. (79%) V, m. 64-8°.

Smrt, J. (2)

(after crystn. from C_6H_6-petr. ether, m. 85°. V (5 g.) refluxed 4 hrs. with 15 ml. 40% aq. HBr, then evapd., and the residue (6.2 g.) dissolved in 40 ml. MeOH and 4 ml. C_5H_5N yielded 1.7 g. (55%) IV, m. 165° (from H_2O). VI (30 g.) and 22.5 g. MeCH:CHCO$_2$Et refluxed 15 hrs. with 0.4 g. Na in 20 ml. EtOH, the mixt. acidified, extd. with three 50 ml. portions of ether, and the exts. evapd. yielded 29.5 g. (60%) of VII, b_2 122-3°. The Schmidt reaction carried out in the same way as for V gave 17 g. of an oil which was directly hydrolyzed with dil. H_2SO_4 (5 ml. concd. H_2SO_4 in 16 ml. H_2O for 11 g. of the oil) by refluxing 5 hrs.; after the removal of the Ba and SO_4 ions the residue was evapd. to dryness and dissolved in 10 ml. H_2O and 10 ml. EtOH to yield 2 g. IX, m. 151°, [after crystn. from H_2O, m. 162° (decompn.)]. The Schmidt reaction with 30 ml. H_2SO_4, 200 ml. $CHCl_3$, 21.4 g. VIII, and 100 ml. 2.9% HN_3 gave an acetamido deriv., which, after hydrolysis with dil. H_2SO_4 and removal of the ions yielded 1.2 g. X, m. 155-8° (from H_2O). XIII. Use of azobenzenesulfonyl chloride in determination end amino acids of peptide chains. Bořivoj Keil, Věra Kneslová, and František Šorm (Central Chem. Inst., Prague, Czech.). *Ibid.* 167-70.—*p*-PhN:NC$_6$H$_4$SO$_2$Cl (I) was found to be a suitable reagent for detg. the end amino acids in peptides. The amino acid (or peptide) was treated with I in dioxane and an equiv. amt. of NaHCO$_3$ in an aq. medium 2 hrs. at room temp., the H_2O and dioxane were evapd. *in vacuo*, and the residue was dissolved in H_2O, extd. with $CHCl_3$ to remove unreacted I, and acidified. The *azobenzenesulfonyl derivs.* (m. pts. given) of the following compds. were prepd.: *glycine* 231-5°, L-*alanine* 145°, L-*valine* 215°, L-*leucine* 168°, DL-*serine* 242°, DL-*threonine* 207°, DL-*methionine* 118°, DL-*phenylalanine* 156°, L-*tryptophan* 236°, DL-*lysine* [illegible]2°, L-*arginine* 172°, DL-*histidine* (Na *salt*) above 300° (decompn.), L-*tyrosine* 165°, DL-α-*N-glutamylglycine* 205°, [illegible] *N-glycyl*-DL-*leucine* 171°, DL-α-*N-aspartylglycine* 115°, *N-(N-γ-L-glutamyl)*-L-*tyrosine* 125°, and DL-*N-leucylglycine* [illegible]2°. Acid hydrolysis (heating 5 hrs. at 130° with 6N HCl) liberated amino acids from the azobenzenesulfonyl derivs.; alk. hydrolysis (4 hrs. at 100° with KOH or BaOH) split only peptidic bonds, so that the end amino acid could be identified from

SMRT, J.

SORM, F., SMRT, J.
"Reaction of Ketene with Acetals of Aldehydes and Ethyl Orthoformate," p. 413.
(Chemicke Listy, Vol.47, No.3, Mar. 1953, Praha.)

SO: Monthly List of East European Accessions, Vol.2, No.9, Library of Congress, September 1953, Uncl.

SMRT, JIRI - CZECH

The reaction of ketene with hydrogen cyanide. JiH Smrt and František Sorm (Czech. akad. věd, Prague, Czech.). *Chem. Listy* 48, 217-20(1954).—In the presence of basic catalysts, CH_2:CO and HCN form a mixt. of CH_2:C(CN)OAc (I) and $MeC(CN)_2OAc$ (II). The yield of I is higher at −70° to −60°. The best yields of I were obtained with $PhNMe_2$ (71%), Et_2NH (61.5%), and EtONa (54%) as catalysts. The structure of I, formed as a primary product, was proved by its transformation to $BrCH_2CH$-(CN)OAc (III) and $BrCH_2CH(OH)CO_2Et$ (IV). CH_2:CO (1.5 moles) passed 2 hrs. through a soln. of 14.5 g. anhyd. HCN in 50 ml. Et_2O contg. 0.5 ml. Et_2NH and cooled to −60°, and the mixt. allowed to stand 2 hrs. at room temp. and fractionated *in vacuo* gave 34.5 g. (61.5%) I, b_{11} 62-4°. To prep. II, 29 g. HCN in 100 ml. Et_2O, 25 ml. Ac_2O, and 0.5 ml. $N(CH_2CH_2OH)_3$ was treated with 2 moles CH_2:CO at −5° during 4 hrs.; distn. *in vacuo* yielded 67 g. (95%) II, b_{11} 105-7°, m. 70°. Heating in an autoclave 5.5 g. I 6 hrs. at 100° with 12.7 g. 31% soln. of HBr in AcOH gave, by vacuum distn., 5.5 g. (57%) III, b_{11} 106°, n_D^{20} 1.4798. Refluxing 3 g. III with 10 ml. 48% aq. HBr 4 hrs., evapg. the soln. *in vacuo*, refluxing the residue with 50 ml. EtOH and 50 ml. C_6H_6 in the presence of 0.1 g. sulfosalicylic acid 6 hrs., dilg. the soln. with 10 ml. H_2O, and extg. the mixt. with 15 ml. Et_2O gave 1.55 g. IV, m. 41°, b_{14} 97°. I (5.5 g.) in 10 ml. Et_2O added with cooling to 8.5 g. $C_5H_{11}N$ in 10 ml. Et_2O gave, by vacuum distn., 11.8 g. (93%) $AcNC_5H_{10}$, b_{11} 106°. Heating 3 g. I in the presence of 30 mg. Bz_2O_2 80 hrs. at 50-60° gave a glassy polymer, swelling in Me_2CO, and soft[illegible] to a rubberlike mass. M. Hudlický

CZECH

Reactions of ketene. III. The reaction of ketene with acid chlorides. Jiří Beránek, Jiří Šorm, and František Šorm (Czech. akad. věd, Prague). *Chem. Listy* 48, 670-81(1954); cf. *C.A.* 49, 17fc, 2311b.—Ketene (I) reacts with acid chlorides having next to the COCl group a neg. group like CH_2COCl, CCl_3, COCl, CO_2Et, $CHCl_2$, COMe, and CH_2Ph, to give primarily the corresponding aceto-acetyl chlorides. The ease of the reaction drops in the order given. Passing I (0.4 mole/hr.) into a soln. contg. 14 g. $CH_2(COCl)_2$ in 30 ml. $CHCl_3$ 3.5 hrs. at −5°-0°, esterifying the mixt. with 25 ml. EtOH, and distg. the product *in vacuo* yielded 15.3 g. $CO(CH_2CO_2Et)_2$, b_1 105-10°, $b_{0.5}$ 92°, d_{20} 1.113, n_D^{20} 1.4420; *semicarbazone*, m. 90°. Treating 54.5 g. CCl_3COCl (II) in 50 ml. $CHCl_3$ with I (0.4 mole/hr.) 3 hrs. at 15°, adding to the mixt. 50 ml. abs. EtOH, and distg. the mixt. *in vacuo* gave 19.5 g. CCl_3CO_2Et, and 37 g. of a solid which yielded 17.1 g. $Cl_3CCH_2CO.CH_2.CO.O$ (III), m. 191° (decompn.) (from C_6H_6-EtOH). Fractionation of the mother liquors *in vacuo* gave 13.5 g. $CCl_3COCH_2CO_2Et$ (IV), b_5 100-102°. Satg. 22.3 g. II in 40 ml. $CHCl_3$ 1.5 hrs. at −5-0° with I (0.4 mole per hr.), esterifying the mixt. with 20 ml. MeOH, and distg. off the solvents and 12 g. CCl_3CO_2Me, b_{18} 48°, gave 5.1 g. III and 1.35 g. $CCl_3COCH_2CO_2Me$, b_{12} 98-8°. Treatment of 18.2 g. II in 20 ml. $CHCl_3$ with 0.4 mole of I at 15° gave, after stripping off the solvent *in vacuo*, 6.2 g. $CCl_3COCH_2COCH_2COCl$, unstable and hygroscopic crystals, m. 67-72°, giving III on melting. Passing 0.6 mole I into a soln. of 12.6 g. $(COCl)_2$ in 20 ml. $CHCl_3$ at

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Jiri Beranek

60–5° and distg. off *in vacuo* at 0° the unreacted $(COCl)_2$ (5.2 g., 41%), esterifying the residue by refluxing 30 min. with 20 ml. EtOH, and distg. the mixt. *in vacuo* gave 8.2 g. $EtO_2CCOCH_2CO_2Et$ (IV), b_{11} 107–113°, $b_{0.4}$ 83°, d_{20} 1.1324, n^{20}_D 1.4535; *semicarbazone*, m. 162°. Satg. a soln. of 13.6 g. $ClCOCO_2Et$ in 20 ml. $CHCl_3$ with 0.4 mole I at 15°, refluxing the mixt. 30 min. with 20 ml. abs. EtOH, and stripping off the solvents gave 2.2 g. $EtO_2CC{:}CH.CO.CH_2.CO.O$, m. 165° (from C_6H_6-EtOH 10:1), 3.15 g. $(CO_2Et)_2$, b_{10} 72°, and 5.5 g. (29%) IV, b_{11} 111–12°. Satg. a boiling soln. of 14.5 g. $CHCl_2COCl$ in 20 ml. $CHCl_3$ with 0.4 mole I and esterifying the mixt. with 20 ml. EtOH gave 9 g. $CHCl_2CO_2Et$, b_{10} 56°, and 2.5 g. (13%) $CHCl_2COCH_2CO_2Et$, b_{11} 104–5°, n^{20}_D 1.4654. The reaction of I with AcCOCl (5 g.) yielded 4.05 g. $AcCO_2Et$, b_{12} 50–5°, and 1.12 g. $AcCOCH_2CO_2Et$, b_{12} 80–8°, b_{10} 74–5°. Satg. the boiling soln. of 15.4 g. $PhCH_2COCl$ in 20 ml. PhCl with 0.4 mole I, and esterifying the mixt. with 20 ml. EtOH yielded 14.8 g. $PhCH_2CO_2Et$, b_{11} 101–8°, and 2.02 g. $PhCH_2COCH_2CO_2Et$, b_{12} 150–5°, b_{11} 144°. Also in Collection Czechoslov. Chem. Commun. 19, 1231–7(1954) (in German). M. Hudlický

Smrt, Jiří

Reactions of ketene. IV. Reaction with acid chlorides in liquid sulfur dioxide. Jiří Smrt, Jiří Beránek, and František Šorm (Czech. Akad. Věd, Prague). *Chem. Listy* 49, 73–7(1955); *Collection Czechoslov. Chem. Communs.* 20, 285–91(1955)(in German); cf. *C.A.* 49, 9545c.—Liquid SO_2 proved to be an excellent medium for the reaction of $CH_2:CO$ (I) with acid chlorides. The yields of the appropriate acetoacetic derivs. were approx. twice as high as compared to the yields in $CHCl_3$. $MeNO_2$ was less suitable solvent than $CHCl_3$, and MeCN gave no yield at all. Reactions were carried out by condensing SO_2 in a flask fitted with a Dry Ice condenser, and by passing I into the liquid SO_2 contg. an acid chloride. EtO_2CCOCl (6.8 g.) in 30 ml. SO_2 was treated during 30 min. with 0.2 mole I, then with 15 ml. abs. EtOH, the mixt. allowed to stand 30 min., and fractionated to give 5.3 g. $EtO_2CCOCH_2CO_2Et$, b_{10} 104–10°, n_D^{20} 1.4533. CCl_3COCl (9.1 g.), 30 ml. SO_2, 0.3 mole I, and 20 ml. EtOH yielded 7.4 g. $CCl_3COCH_2CO_2Et$, b_{17} 112–17°. $CHCl_2COCl$ (14.7 g.), 30 ml. SO_2, 0.4 mole I, and EtOH gave 7.4 g. $CHCl_2COCH_2CO_2Et$, b_{28} 115–20°, n_D^{20} 1.4651. Passing 0.2 mole I during 1 hr. into 6.35 g. $(COCl)_2$ in 25 ml. SO_2, allowing the mixt. to stand 30 min., esterifying with 25 ml. abs. EtOH, evapg. *in vacuo*, treating the cryst. residue with 5 ml. EtOH, filtering the crystals, and washing them with 3 ml. EtOH yielded 3.7 g. $(COCH_2CO_2Et)_2$ (II), m. 81° (from EtOH). Fractionation of the mother liquor gave 2.1 g. $EtO_2CCOCH_2CO_2Et$, $b_{0.5}$ 78–80°, and 1.7 g. II, $b_{0.5}$ 110–12°. Total yield of II was 5.4 g. Under the same conditions, I did not react with *meso*-$(BrCHCOCl)_2$, b_{12} 102° (prepd. in 99% yield by treating 15.2 g. fumaryl chloride with 16 g. Br at 40° and irradiation).

V. Reaction of ketene with substituted malonyl chlorides. František Šorm, Jiří Beránek, Jiří Smrt, and Jiří Sicher. *Chem. Listy* 49, 78–81(1955); *Collection Czechoslov. Chem. Communs.* 20, 593–6(1955)(in German).—From many substituted malonyl chlorides tested, only $PhCH(COCl)_2$ (I), $PhCH_2CH(COCl)_2$ (II), $Cl_2C(COCl)_2$ (III) and $CH_2:CH-CH_2CH(COCl)_2$ (IV) react with $CH_2:CO$ (V) to give the corresponding dicarboxylates. To prep. I, 10 g. $PhCH(CO_2H)_2$ (VI) in 50 ml. Et_2O were treated with 23 g. PCl_5, the mixt. was refluxed 2–3 hrs., and distd. *in vacuo* to give 6.8 g. I, b_2 109–10° (method *A*). I was hydrolyzed to VI, m. 151°. Treating 8 g. VI with 18.6 g. PCl_5, refluxing the mixt. 2 hrs., and distg. it *in vacuo* yielded 5.7 g. $PhCCl(COCl)_2$, $b_{0.2}$ 83°; $PhCCl(CO_2Et)_2$ b_2 144°. $PhCH_2CH(CO_2H)_2$ (35 g.) treated with 59 g. $SOCl_2$, heated 2 hrs. at 80°, and distd. *in vacuo* yielded 23.5 g. II, $b_{1.5}$ 110–12° (method *B*). $PhCH_2CH(CO_2Et)_2$ $b_{0.2}$ 125–6°. Refluxing 17.2 g. $CCl_2(CO_2H)_2$ and 41 g. PCl_5 2 hrs. on the steam bath yielded 12.8 g. III, b_{10} 56–7° (method *C*). The following acid chlorides were prepd. by methods *A*, *B*, and *C* (method,

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% yield, and b.p. given): $MeCH(COCl)_2$, *A*, 86, b_{13} 58°; $Me_2C(COCl)_2$, *C*, 60, b_{10} 60°; $EtCH(COCl)_2$, *C*, 50, b_{22} 75°; $PrCH(COCl)_2$, *A*, 70, b_{22} 80°; iso-$PrCH(COCl)_2$, *A*, 71, b_{13} 77°; IV, *C*, 66, b_{10} 60°; $BuCH(COCl)_2$, *C*, 77, b_{10} 70°; $Bu_2C(COCl)_2$, *C*, 64, b_{10} 122°. iso-$PrCH(CO_2Et)_2$ b_{26} 114°. $BuCH(CO_2Et)_2$ b_{22} 135°. $Bu_2C(CO_2Et)_2$ b_{13} 150°. Passing at 0° 0.3 mole V into a soln. of 10.8 g. I in 30 ml. $CHCl_3$ during 1 hr., and heating the mixt. 20 min. with 20 ml. EtOH gave by distn. 3.3 g. $PhCH(CO_2Et)_2$, $b_{0.1}$ 74–80°, and 5.5 g. (40%) $PhCH(CO_2Et)COCH_2CO_2Et$, $b_{0.2}$ 127°, n_D^{25} 1.5074. Similar treatment of 10.5 g. III in 30 ml. $CHCl_3$ with 0.2 mole and EtOH V gave 7.75 g. $CCl_2(CO_2Et)_2$, b_{13} 110–13°, and 3.25 g. $EtO_2CCCl_2COCH_2CO_2Et$, b_1 110–12°, $b_{0.5}$ 110°. II (11.55 g.) and 0.4 mole V gave 4.2 g. $EtO_2CCH(CH_2Ph)COCH_2CO_2Et$, $b_{0.1}$ 133°, n_D^{25} 1.4983. IV (9 g.) and V gave 0.03 g. $CH_2{:}CHCH_2CH(CO_2Et)COCH_2CO_2Et$, $b_{0.1}$ 95°, n_D^{25} 1.4536.

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Reactions of ketene. VI. Reactions with halogen derivatives of sulfur. F. Sorm, J. Smrt, and J. Beránek (Czech. Akad. věd, Prague). ~~Chem. Listy~~ 49, 573-4; *Collection Czechoslov. Chem. Communs.* 20, 721-3(1955)(in German); cf. *C.A.* 49, 15773*d*.—EtSCl, S_2Cl_2, and $SOCl_2$ add normally to CH_2:CO (I). SO_2Cl_2 transforms I to $ClCH_2COCl$, and SCl_2 gives polymers. Passing I (0.6 mole) during 2 hrs. into a boiling soln. of 11.89 g. $SOCl_2$ in 30 ml. liquid SO_2, adding 25 ml. abs. MeOH, and distg. the mixt. yielded 9.05 g. $SO(CH_2CO_2Me)_2$, $b_{0.1}$ 92°, n_D^{20} 1.4875. Passing, at −70°, 0.2 mole I during 30 min. into a soln. of 13.5 g. S_2Cl_2 in 25 ml. $CHCl_3$, adding to the mixt. 25 ml. MeOH, refluxing the mixt. 10 min., and distg. *in vacuo* gave 12.2 g. $S_2(CH_2CO_2Me)_2$, $b_{1.2}$ 103°, n_D^{20} 1.5168. Passing 30 min. 0.2 mole I into a soln. of 4.5 g. EtSCl in 20 ml. liq. SO_2 and esterifying the mixt. with 15 ml. EtOH gave 4.05 g. $EtSCH_2CO_2Et$, b_{10} 73°.

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CZECHOSLOVAKIA/Organic Chemistry. Naturally Occurring Substances and their Synthetic Analogs. G-3

Abs Jour: Referat Zhur-Khimiya, No 4, 1958, 11467.

Author : Smrt, J., Beranek, J., Sicher, J., and Sorm, F.
Inst : ———
Title : Synthesis of 4-amin-3-isooxazolidone (Cycloserine)

Orig Pub: Chem Listy, 51, No 1, 112-122 (1957) (in Czech); Sbornik Chekhoslov Khim Rabot, 22, No 1, 262-273 (in English with a summary in Russian)

Abstract: The antibiotic cycloserine (I) (see RZhKhim, 1956, 16239) has been synthesized from the methyl ester of N-tritylserine (II) via the methyl ester of O-mesyl-N-tritylserine (III), 1-trityl-2-carbomethosyethylene-imine (IV), which on reaction with $NH_2OH.HCl$ gives

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Nucleic-acid components and their analogies. IV. Synthesis of β-d-ribofuranosyl-6-azauracil-5' phosphate and phyrophosphate. Coll Cz Chem 25 no.1:130-137 Ja '60. (EEAI 9:12)

1. Department of Organic Synthesis, Institute of Chemistry, Czechoslovak Academy of Science, Prague.
(Nucleic acids) (Phosphates) (Pyrophosphates)
(Ribofuranosyltriazinedione)

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Nucleic-acid components and their analogues. VII. Synthesis of 6-azauracil riboside (6-azauridine) phosphates. Coll Cz Chem 25 no.8:2029-2037 Ag '60. (EEAI 10:9)

1. Department of Organic Synthesis, Institute of Chemistry, Czechoslovak Academy of Science, Prague.

(Nucleic acids) (Ribofuranosyltriazinedione phosphate)
(Azauracil ribosidephosphate)

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6-Azacytidine andits derivatives. Dokl.AN SSSR 137 no.6:1393-1395 Ap '61. (MIRA 14:4)

1. Institut organicheskoy khimii i biokhimii AN Chekhoslovatskoy SSR, Praga (for all except Chernetskiy). 2. Institut organicheskoy khimii Akademii nauk USSR, Kiyev (for Chernetskiy).
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37. "Oxidimetric Determination of Trivalent Cerium Salts with Periodate," J. DOLEZAL, S. ROSSLER and J. ZYKA of the Institute for Analytical Chemistry at Charles University, Prague; pp1031-1033.

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40. "Spectrophotometric Determination of Haptoglobin with the Modified Connal and Smithies Method," J. PINTERA of the Transfusion Station at the [Medical] Faculty in Brno; pp 1043-1045.

41. "Gas-Fluid Chromatography. The Relation between the Desired Elution Volume and the Molecular Refraction of Organic Compounds," L. N. VORONYEV, Chair of Organic Technology at the Chemical-Technological Institute in Prague; pp 1045-1048.

42. "Photooxidation of an Unidentified Component of Wood Acetone. Part II. Determination of the Ratios of the Isomers of Coproporphyrin I and III, Following Paper-Chromatographic Separation," V. HOLECEK, Institute for Work Hygiene and Occupational Diseases, Prague; pp 1049-1053.

43. "Nucleic Acid Components and Their Analogues. Part XVII. Reaction of Uracil and of Its Aza Analogues with Ethylene Carbonate," M. PRUSIAS and J. GUT, Institute of Organic Chemistry and Biochemistry at the Czechoslovak Academy of Sciences, Prague; pp 1054-1056 (English article).

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"Phosphates Derived from 3-Hydroxysulpholane and 3-Hydroxysulphol-2-ENE as Phosphorylating Agents"

Co-author:

SMRT, J. same as above

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Phosphates derived from 3-hydroxysulfolane and 3-hyroxysulfol-2-ene as phosphorylating agents. Coll Cz chem 27 no.10:2404-2407 O '62.

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Prague, Collection of Czechoslovak Chemical Communications, No 12, 1962, pp 2784-2795

"Preparation and Methanolysis of Uridine, 6-Azauridine and 6-Azacytidine O-Formyl Derivatives"

ZEMLICKA, J.; SMRT, J.; SORM, F.

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[illegible] A.; [illegible]OVSKA, N. [illegible]; SORM, J.

Synthesis of [illegible]-uridylyl-(5'→[illegible]-5')-[illegible]-uridine and P^1, P^2-di-([illegible]-uridylyl-5'-)-pyrophosphate. [illegible] Chem 29 no.10:2567-2570 O '64.

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